BOOK REVIEWS

Directory of Scientific Instruments and Components Manufactured in India.

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We congratulate Dr. P. S. Gill, Director of the above Institution for bringing out this monumental work The painstaking labour and organization behind this Directory can easily be understood on going through it The Directory has filled a much felt need for the users of scientific and technical instruments The compilation has been very thorough and leaves apparently very little to be desired. Indeed, it was a pleasure to find that so many things of scientific interest are obtainable in this country, only we are not sure how many of these can attain the specifications and needs of scientific research. "The proof of the pudding is in the eating" as the old adage goes, but that does not in any way reduce the credit of the compilers. We have no doubt that all scientific workers of the country will make considerable use of this Directory.

A. B.

Lectures in Theoretical High Energy Physics.

Ed. H. H. Aly John Wiley & Sons Ltd. Price $ 17.50

This is a collection of thirteen articles by various authors on diverse aspects of Particle Physics. The articles differ vastly in their scope and content. Some of them are reviews while others present new ideas.

Sudarshan gives a brief history of Weak Interaction Theory culminating in the discovery of the V-A interaction and then discusses a theory in which the weak and electromagnetic interactions of hadrons are induced by the direct couplings of the vector and axial vector mesons. There are two articles on the P, C, T symmetries. Nilsson's article is a detailed treatment of invariance principles, especially P, C and T. Taylor deals with the problem of defining a discrete symmetry operator when it is not an exact symmetry and also discusses a magnetic monopole model for CP violation.

Pietschmann chooses two of the important results of current algebra, namely the Adler-Weissberger sum rule and the soft-pion theorem for the leptonic K decays and carries out the calculations completely for the benefit of beginners in the field. Moffat proposes a theory in which the violation of chiral SU(3)×SU(3) symmetry is due to non-Riemannian space-time geometry associated with a non-symmetrical affine connexion $\Gamma_{\mu\nu}^{\lambda}$.

Two papers deal with the quark model. Riazuddin and Sarker consider two applications of quark model, namely, the electromagnetic and strong decays of hadrons and the high energy cross section relations and then go on to discuss a theory in which the scalar and pseudoscalar densities $\bar{q}\,\gamma_1\,q$ and $\bar{q}\,\gamma_5\,\gamma_1\,q$ determine the medium strong and electromagnetic mass differences as well as the non-leptonic weak decays. Uretsky builds up the mesons as quark-antiquark states and discusses the resulting meson spectroscopy.

The topic of composite particles in field theory is discussed in three articles. Taylor deals with bootstraps in field theory while Hagen discusses the Z=0 rule in various models and extends this rule to the multiparticle and virtual state situations. Lurie gives a vary readable account of the Haag-Nishijima-Zimmerman analysis concerning the arbitrariness in the choice of interpolating fields and the construction of composite particle fields.